

The Listing of Claims:

1 (Currently Amended) A process for the preparation of a polypropylene polymer composition with bimodal rubber, said process comprising the steps of:

    i) feeding propylene to a at least one slurry reactor and producing a polypropylene polymer matrix in the presence of a polymerization catalyst in said at least one slurry reactor,

    ii) transferring the slurry reactor product into a gas phase reactor (GPR),

    iii) feeding a first mixture of ethylene and propylene to said first gas phase reactor and producing a first ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said first gas phase reactor,

    iv) transferring the first gas phase reactor product into a second gas phase reactor,

    v) feeding a second mixture of ethylene and propylene to said second gas phase reactor and producing a second ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said second gas phase reactor, and

    vi) recovering the polymer product produced in step v) for further processing,

    wherein said first and second ethylene/propylene mixtures having different composition ratios and wherein said first ethylene/propylene copolymer has a higher average molecular weight than said second ethylene/propylene copolymer, and

    wherein the composition ratios of said first and second ethylene/propylene mixtures are adjusted so that in the first gas phase reactor, a propylene rich ethylene propylene rubber (EPR) is produced in the propylene polymer matrix, and in the second gas phase reactor,

an ethylene rich EPR rubber is produced in the propylene polymer matrix, and wherein  
said polypropylene polymer composition has improved scratch resistance.

2 (Canceled)

3 (Previously Presented) The process of claim 1, whereby the polymerization conditions in the gas phase reactors are such that in one GPR reactor A, the gas phase polymerization step is carried out by adding propylene and ethylene monomers where the resulting amount of C<sub>2</sub> in the EPR formed in gas phase reactor A is in the range from 39 – 74 mol% and that in the other GPR reactor B, the gas phase polymerization step is carried out by adding propylene and ethylene monomers where the resulting amount of C<sub>2</sub> in the EPR formed in gas phase reactor B is in the range from 77 – 99.9mol%

4 (Previously Presented) The process of claim 3, whereby in GPR reactor A, the molar H<sub>2</sub>/C<sub>2</sub> ratio is in the range between 0.01 to 0.1, and in GPR reactor B, the molar H<sub>2</sub>/C<sub>2</sub> ratio is in the range between 0.3 to 0.7.

5 (Previously Presented) The process of claim 1, whereby the polymer products are flashed before transferring them to the next polymerization step.

6 (Previously Presented) The process of claim 1, whereby the first and second GPR polymerization steps are carried out in the same gas phase reactor.

7 (Previously Presented) The process of claim 1, whereby the polymer product obtained in step vi is further treated for compounding with additives and/or fillers.

8 (Previously Presented) The polymer product obtained according to the process of claim 1.

9 (Previously Presented) The polymer product of claim 8, further comprising at least one additive or filler selected from minerals, slip agent and processing agents.

10 (Previously Presented) The polymer product obtained according to the process of claim 1 and having a dL value of less than 4.

11 (Currently Amended) A method for manufacturing molded articles comprising the step of molding ~~the polymer of claim 8, a polymer obtained according to a process comprising the steps of~~

i) feeding propylene to a at least one slurry reactor and producing a polypropylene polymer matrix in the presence of a polymerization catalyst in said at least one slurry reactor,

ii) transferring the slurry reactor product into a gas phase reactor (GPR),

iii) feeding a first mixture of ethylene and propylene to said first gas phase reactor and producing a first ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said first gas phase reactor,

iv) transferring the first gas phase reactor product into a second gas phase reactor,

v) feeding a second mixture of ethylene and propylene to said second gas phase reactor and producing a second ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said second gas phase reactor, and

vi) recovering the polymer product produced in step v) for further processing,

wherein said first and second ethylene/propylene mixtures having different composition ratios

wherein the composition ratios of said first and second ethylene/propylene mixtures are adjusted so that in the first gas phase reactor, a propylene rich ethylene propylene rubber (EPR) is produced in the propylene polymer matrix, and in the second gas phase reactor, an ethylene rich EPR rubber is produced in the propylene polymer matrix, and wherein said polypropylene polymer composition has improved scratch resistance.

12 (Previously Presented) A molded article comprising the polymer of claim 8.

13 (Previously Presented) The process of claim 3, wherein the resulting amount of C<sub>2</sub> in the EPR formed in gas phase reactor A is in the range from 53 – 65 mol%.

14 (Previously Presented) The process of claim 3, wherein the resulting amount of C<sub>2</sub> in the EPR formed in gas phase reactor B is in the range from 84 – 96 mol%.

15 (Previously Presented) The process of claim 3, whereby in GPR reactor A, the molar H<sub>2</sub>/C<sub>2</sub> ratio is in the range between 0.03 to 0.06.

16 (Previously Presented) The process of claim 3, whereby in GPR reactor A, the molar H<sub>2</sub>/C<sub>2</sub> ratio is 0.05.

17 (Previously Presented) The process of claim 3, whereby in GPR reactor B, the molar H<sub>2</sub>/C<sub>2</sub> ratio is in the range between 0.4 to 0.6.

18 (Previously Presented) The process of claim 3, whereby in GPR reactor B, the molar H<sub>2</sub>/C<sub>2</sub> ratio is 0.5.

19 (Previously Presented) The polymer product of claim 10 having a dL value of less than 2.

20 (Currently Amended) A method for manufacturing molded articles comprising the step of molding ~~the polymer of claim 9, a polymer comprising at least one additive or filler selected from minerals, slip agent and processing agents, the polymer being obtained according to a process comprising the steps of~~

i) feeding propylene to a at least one slurry reactor and producing a polypropylene polymer matrix in the presence of a polymerization catalyst in said at least one slurry reactor,

ii) transferring the slurry reactor product into a gas phase reactor (GPR),  
iii) feeding a first mixture of ethylene and propylene to said first gas phase reactor and producing a first ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said first gas phase reactor,

iv) transferring the first gas phase reactor product into a second gas phase reactor,

v) feeding a second mixture of ethylene and propylene to said second gas phase reactor and producing a second ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said second gas phase reactor, and

vi) recovering the polymer product produced in step v) for further processing, wherein said first and second ethylene/propylene mixtures having different composition ratios

wherein the composition ratios of said first and second ethylene/propylene mixtures are adjusted so that in the first gas phase reactor, a propylene rich ethylene propylene rubber (EPR) is produced in the propylene polymer matrix, and in the second gas phase reactor, an ethylene rich EPR rubber is produced in the propylene polymer matrix, and wherein said polypropylene polymer composition has improved scratch resistance.

21 (Currently Amended) A method for manufacturing molded articles comprising the step of molding the polymer of claim 10, a polymer having a dL value of less than 4, the polymer being obtained according to a process comprising the steps of

i) feeding propylene to a at least one slurry reactor and producing a polypropylene polymer matrix in the presence of a polymerization catalyst in said at least one slurry reactor,

ii) transferring the slurry reactor product into a gas phase reactor (GPR),

iii) feeding a first mixture of ethylene and propylene to said first gas phase reactor and producing a first ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said first gas phase reactor,

iv) transferring the first gas phase reactor product into a second gas phase reactor,

v) feeding a second mixture of ethylene and propylene to said second gas phase reactor and producing a second ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said second gas phase reactor, and  
vi) recovering the polymer product produced in step v) for further processing,  
wherein said first and second ethylene/propylene mixtures having different composition ratios

wherein the composition ratios of said first and second ethylene/propylene mixtures are adjusted so that in the first gas phase reactor, a propylene rich ethylene propylene rubber (EPR) is produced in the propylene polymer matrix, and in the second gas phase reactor, an ethylene rich EPR rubber is produced in the propylene polymer matrix, and wherein said polypropylene polymer composition has improved scratch resistance.

22 (Currently Amended) A method for manufacturing molded articles comprising the step of molding the polymer of claim 19, a polymer having a dL value of less than 2, the polymer being obtained according to a process comprising the steps of

- i) feeding propylene to a at least one slurry reactor and producing a polypropylene polymer matrix in the presence of a polymerization catalyst in said at least one slurry reactor,
- ii) transferring the slurry reactor product into a gas phase reactor (GPR),
- iii) feeding a first mixture of ethylene and propylene to said first gas phase reactor and producing a first ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said first gas phase reactor,
- iv) transferring the first gas phase reactor product into a second gas phase reactor,

v) feeding a second mixture of ethylene and propylene to said second gas phase reactor and producing a second ethylene/propylene-copolymer in the polymer matrix in the presence of a polymerization catalyst in said second gas phase reactor, and

vi) recovering the polymer product produced in step v) for further processing,  
wherein said first and second ethylene/propylene mixtures having different  
composition ratios

wherein the composition ratios of said first and second ethylene/propylene mixtures are adjusted so that in the first gas phase reactor, a propylene rich ethylene propylene rubber (EPR) is produced in the propylene polymer matrix, and in the second gas phase reactor, an ethylene rich EPR rubber is produced in the propylene polymer matrix, and wherein said polypropylene polymer composition has improved scratch resistance,

23 (Previously Presented) A molded article comprising the polymer of claim 9.

24 (Previously Presented) A molded article comprising the polymer of claim 10.

25 (Previously Presented) A molded article comprising the polymer of claim 19.